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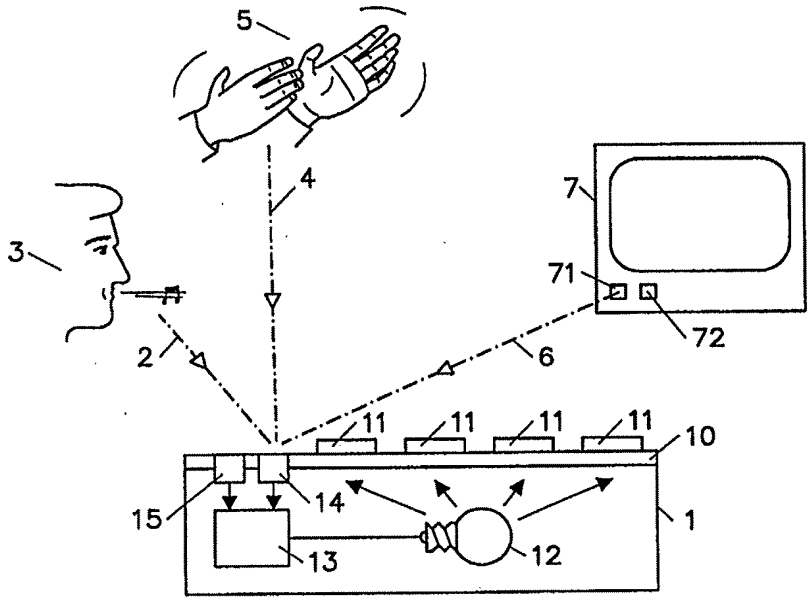
**(54) Title:** REMOTE CONTROL APPARATUS




**(57) Abstract**

A remote control device is disclosed with a keyboard (10) and a light source (12) for illuminating said keyboard. The device comprises a detector (13) which activates the light source upon reception of an external signal. The external signal may be a specific sound signal such as a whistle tone (2) or clapping of hands (4). It may also be a wireless signal (6) generated by the controlled appliance (7) when a button (72) of said apparatus is pressed. An optional light sensor (15) may disable the operation of the detector by day.

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Remote control apparatus.

The invention relates to a remote control device comprising a keyboard and a light source for illuminating said keyboard.

Illuminated remote control devices as defined in the opening paragraph simplify the control of home appliances such as television receivers in a dusky living room. Usually, the keyboard has transparent keys and the light source is of the backlight type. An example hereof is disclosed in US 5,568,367.

The invention addresses the aspect of activating the light source. In the above-mentioned prior art remote control device, the light source is activated by pressing a particular key. However, the necessity for a user to press a key for activating the illumination of a remote control device constitutes a vicious circle. The first key to be pressed still has to be found by touch. For many persons, particularly elderly people who are afraid to press the "wrong" key, this is a tremendous problem.

It is an object of the invention to provide a remote control device which does not have this disadvantage.

To achieve this, the remote control device in accordance with the invention is characterized in that the device comprises means for detecting an external signal and activating the light source in response to detection of said external signal. Herewith, the need for pressing a key to activate the light source is eliminated.

The external signal may be a specific sound signal produced by the user, such as whistling or clapping his hands. The external signal may also be an ultrasonic, infrared, or radio signal produced by the controlled apparatus in response to pressing a key on said apparatus. It should be noted that the abstract of Japanese Patent Application JP 61-292479 discloses a remote control device which generates a light signal when it detects an external signal produced by the controlled apparatus. However, the light source of this device does not illuminate the keyboard. The light signal allows the user to locate the remote control device when it has been mislaid.

The external signal may also be kinetic motion applied to the device. In such an embodiment, the light source is simply activated, inter alia, by shaking the device for a short period of time.

In order to preclude the light source from consuming battery power when illumination is not necessary, a light sensor may be provided for disabling the detection means when sufficient environmental light is detected.

Fig.1 shows a remote control device in accordance with the invention.

Fig.2 shows a remote control device in accordance with a further embodiment of the invention.

Fig.1 shows a cross section of a remote control device in accordance with the invention. The device **1** comprises a keyboard **10** with a plurality of labeled keys **11**. The keys are transparent and illuminated by a light source **12**. The remote control device further comprises a detector **13** which is arranged so as to activate the light source **12** in response to an input signal which is received from a transducer **14**. The light source may be switched off automatically after a predetermined period of time, or in response to the reception of a further input signal.

In one embodiment of the invention, the transducer **14** is a microphone. The detector **13** is arranged to detect a whistle tone **2** produced by a person **3**, or an audio wave **4** that is typically produced by clapping of hands **5**. The detector **14** is known per se and needs no further description. It is already used, inter alia, for locating mislaid articles such as key rings which produce a beep signal in response to whistling or clapping of hands.

The remote control device **1** may optionally comprise a light sensor **15**. The sensor is connected to detector **13** so as to prevent the detector from activating the light source **12** when there is sufficient environmental light. A considerable reduction of battery power consumption is herewith achieved because the keyboard will not be illuminated unintentionally in the daytime.

In another embodiment of the invention, the transducer **14** is an element for receiving a wireless signal **6** which is generated by a signal generator **71** accommodated in the controlled apparatus **7** when a button **72** of said apparatus is pressed. The signal **6** may be an ultrasonic, infrared or radio signal.

Fig.2 shows a cross section of a remote control device in accordance with a further embodiment of the invention. The detector **13** is now arranged to detect kinetic motion applied to the device. In the embodiment shown, the detector comprises two contact plates **131** and **132**, perpendicular to each other, and a conducting ball **133** which is withheld from making contact with one of the plates by means of a spring member **134**. If the remote control device is subject to substantial acceleration due to, inter alia, shaking, the ball

contacts the plate **131** in spite of the spring force, and the light source is provided with power from a power source **16**. It will be appreciated that more sophisticated detectors than the simple mechanical one described above can be used. For example, electromechanical accelerometers as used in wireless PC mouse devices, or acceleration detectors as used in car airbag systems, are nowadays available.

Although the invention described hereinbefore relates to a remote control device for controlling home consumer equipment, it is not restricted thereto. More particularly, a mobile telephone apparatus having a keyboard for controlling an operation center so as to establish a requested telephone connection is also understood to fall under the wording of the appended claims.

In summary, a remote control device is disclosed with a keyboard (10) and a light source (12) for illuminating said keyboard. The device comprises a detector (13) which activates the light source upon reception of an external signal. The external signal may be a specific sound signal such as a whistle tone (2) or clapping of hands (4). It may also be a wireless signal (6) generated by the controlled appliance (7) when a button (72) of said apparatus is pressed. An optional light sensor (15) may disable the operation of the detector by day.

Claims

1. A remote control device comprising a keyboard and a light source for illuminating said keyboard, characterized in that the device comprises means for detecting an external signal and activating the light source in response to detection of said external signal.

2. A remote control device as claimed in claim 1, wherein the external signal is a predetermined sound signal.

3. A remote control device as claimed in claim 1, wherein the external signal is received from an apparatus controlled by the device.

4. A remote control device as claimed in claim 1, wherein the external signal is kinetic motion applied to the device.

5. A remote control device as claimed in any of the preceding claims, further comprising a light sensor for detecting the amount of environmental light, the detection means being arranged to activate the light source in response to the amount of environmental light.

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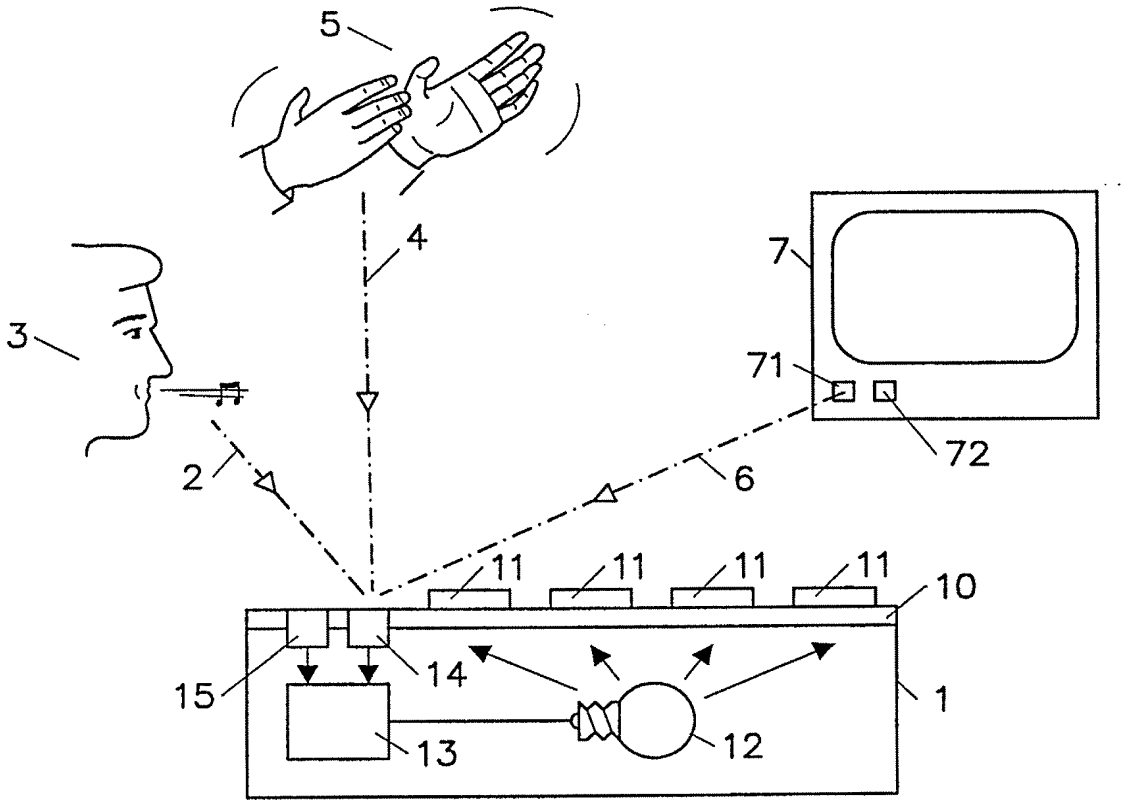
5
4
7
3
71
72
2
6
11
11
11
11
10
15
14
1
13
12

FIG. 1

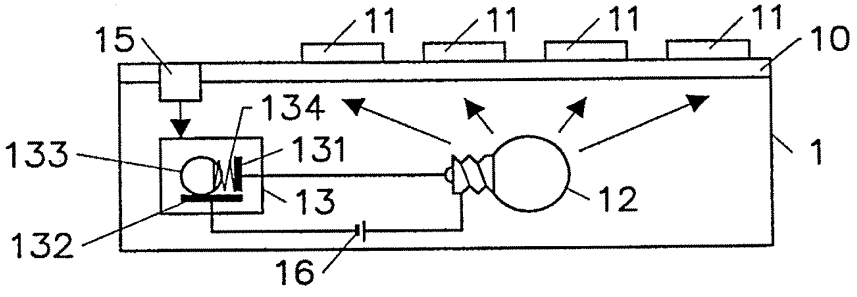
11
11
11
11
15
10
134
133
131
1
13
12
132
16

FIG. 2

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 98/00554

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: G08C 23/00, H01H 9/18
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: G08C, H01H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X | EP 0683476 A1 (SUMITOMO WIRING SYSTEMS, LTD.), 22 November 1995 (22.11.95), column 1, line 39 - line 58, figures 1-6, abstract | 1,3,5 |
| Y | figures 1-6, abstract | 2 |
| | -- | |
| Y | GB 2135536 A (WOBBOT INTERNATIONAL LIMITED), 30 August 1984 (30.08.84), figure 1, abstract | 2 |
| | -- | |
| X | US 5183325 A (TERRY D. HURDLE), 2 February 1993 (02.02.93), abstract | 1,4 |
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☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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| 4 Sept 1998 | 10-09-1998 |
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

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International application No.
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| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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| EP 0683476 A1 | 22/11/95 | JP 7309170 A | 28/11/95 |
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| GB 2135536 A | 30/08/84 | NONE | |
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| | | WO 9206327 A | 16/04/92 |